

**REPORT AND RECOMMENDATIONS
AGRICULTURAL HEALTH TASK FORCE
OF THE
MISSOURI RURAL HEALTH COALITION
INITIATIVE**

Presented to

The Missouri Office of Rural Health Advisory Commission

Prepared by

The University of Missouri/NIOSH

Agricultural Safety and Health Advisory Committee

Profile of Missouri Agriculture

In 1991, there were an estimated 107,000 farms in Missouri, which constituted 5.2% of the total number of farms nationally (1992 Missouri Farm Facts). These farms encompassed a total of 30.4 million acres of farmland. The average farm size in Missouri was 284 acres, compared with a national average of 467 acres.

Missouri farms produced 3.851 billion dollars of cash receipts from the sale of agricultural commodities during 1991. Nearly 1.1 billion dollars of these receipts were the result of overseas exports. About 60% of these receipts came from the sale of livestock and livestock products, and about 40% from the sale of crops. Missouri commodities in order of receipts were: cattle, soybeans, hogs and dairy products.

There are an estimated 130,000 Missourians employed in agricultural production. Approximately 80% of these workers can be classified as family labor, while the remaining 20% are classified as seasonal permanently hired employees.

The average farm operator in Missouri is 52.9 years of age, a 3.7 increase in age over the 1982 census (51.0 years of age). Approximately 70% of farmers surveyed had farmed more than 10 years.

An increasing number of Missouri farmers are becoming part-time or "sundown" farmers. Based on the 1987 Census of Agriculture, only about half of the farm operators reported farming as their principal operation. Sixty-two percent of these farmers reported they were working some off the farm, and 39% reported working more than 200 days off the farm.

Missouri Agricultural Accident Situation

Fatalities

According to data from the Bureau of Health Data Analysis, agricultural work accidents are the most frequent cause of occupation-related fatalities in Missouri. During the period 1986-90, there were 199 agricultural work deaths (Table 1). A disproportionate number of these occupational deaths in agricultural settings occurred to individuals over 55 years of age (52%). Males were involved in 93% of fatal agricultural accidents.

On an average, agricultural machinery accounts for approximately 81% of agricultural work fatalities each year. Tractor accidents account for about 78.9% of machinery fatalities. Approximately 58% of these tractor fatalities are the result of tractor overturns, which occur at a rate of about 15 deaths per year.

Forty-six percent of the Missouri agricultural unintentional injury deaths occurred in June, August, September, and October.

Table 1
Agricultural Unintentional Injury Deaths
by Agent of Accident

	1986	1987	1988	1989	1990	Total
Machinery	36	33	32	25	35	161
Tractor	24	28	28	19	28	127
(Overturns)	(15)	(14)	(16)	(12)	(17)	(74)
Auger	3	--	--	1	--	4
Truck	1	2	1	2	--	6
Mower	2	1	2	2	5	12
Misc	6	2	1	1	2	12
Animal	1	--	1	1	--	3
Tree cutting	--	4	5	--	1	10
Grain bins	--	2	1	--	--	3
Electrocution	--	2	1	2	2	7
Drowning	--	1	--	1	--	2
Fire	--	--	2	1	--	3
Unspecified	6	2	--	2	--	10
Totals	43	44	42	32	38	199

Injuries—Agriculture

Disabling injuries also have had a significant impact upon the agricultural population. Nationally, approximately two-thirds of agricultural disabling injuries are classified as severe and/or permanent. Few of these injured workers are covered by Worker's Compensation; therefore, undue financial stress is placed on the individual and his or her family and community.

Based upon the 1989 Missouri NIOSH/NSC Farm Work Injury Mail Survey, there were 15.61 injury incidences per 100 farms in Missouri. Eighty percent of these accidents involved family labor. Forty-nine percent resulted in five or fewer lost days of work.

Thirty-two percent of the injury accidents involved farm machinery. Tractors were involved in one-third of the machinery injuries. Livestock were the next highest accident agents after machinery, accounting for 25.5% of the agricultural work injuries.

This survey found that the hand was the most frequent body part injured, followed by the arm/shoulder and back, respectively. These three body parts accounted for 45.8% of the injuries reported. The most frequent type of injury was a cut (18.6%), followed by sprains and strains (16.9%), and bruises (15.3%).

Occupational Health

Unlike accident data, occupational health statistics, for the most part, have not been gathered on a systematic basis at the state or national level for agriculture. According to the Bureau of Labor Statistics (BLS), over 190,000 occupational illnesses were recognized or diagnosed nationally in 1987 (NSC 1989). The BLS established that the overall incidence rate of occupational illnesses for all workers was 26.1 per 10,000 full-time workers. The same study estimated the agricultural incidence rate was 51.7 per 10,000 workers. Agriculture had the second highest incidence rate, with manufacturing being first. The study found that agricultural workers had the highest incidence rates of all the industrial divisions for skin diseases and respiratory conditions due to toxic agents and poisoning. It should be noted that all farms with less than 11 employees were excluded from the study. For Missouri, this is a major segment of the industry.

A study of Missouri of "High-Frequency Hearing Loss in the Male Farmers of Missouri," conducted by the University of Missouri, found that farmers have a significantly higher risk of hearing loss than their non-farm male counterparts (Public Health Reports, 1983). Fixed-level screening tests were conducted in both ears of 258 male farmers and 251 male non-farmers at three frequencies: 1000 and 2000 Hz at 20 dB HL and 4000 Hz at 25 dB HL.

Although limited in number, each study of agricultural workers has found, in most cases, farmers, their families and workers suffer a higher frequency of health-related disabilities than their non-farming counterparts. This is especially true as it relates to such as Farmers Lung, toxic organic dust syndrome, bronchitis and asthma, as well as certain forms of cancer, arthritis and dermatitis.

There also are certain infectious diseases which are much more likely to occur in farmers and their families. These are histoplasmosis, ornithosis, Q fever, bovine tuberculosis, hydatidosis, Newcastle disease, swine influenza, tularemia and erysipelas.

Recommendations

The agricultural population is exposed to a wide range of physical and environmental hazards. Most research will show that this population suffers a disproportionate share of the fatalities, injuries and health-related disabilities that result from this exposure. It should be emphasized that PREVENTION is the goal for agricultural health and safety rather than treatment efforts. Certainly this is true for humane reasons; however, in this era of intense concern about health care costs, an ounce of prevention in morbidity and mortality would be staggering. An extant example is the unguarded moving shaft (power take-off). The protective shields cost about \$200, while the health care for injuries involving unguarded shafts cost in the neighborhood of \$500,000. This figure does not account for the tremendous psychological trauma to the victim and the family. Interventional medicine depends upon the presence of injuries or disease, while agricultural safety and health intervention promotes injury and illness prevention, and preventive medicine promotes health and wellness. Fortunately for everyone, there is a shift toward this promotion of health and wellness and injury prevention. Now is the time to make agricultural safety and health a reality.

Based on these facts, the Advisory Commission makes the following recommendations to the Missouri Department of Health, Office of Rural Health for consideration:

- Create central focus for agricultural safety efforts. Although a coalition will be working on a variety of topics, we recommend that the University Extension Agricultural Safety Program serve as convener and coordinator.
- Establish a strong, usable database specific to agriculture.
- Since tractor overturns is the leading cause of agriculture-related deaths, establish a public/private partnership to address the issue of tractor overturns.
- Agriculture-related illnesses often are not diagnosed by attending physicians because of lack of training in identifying agricultural diseases. Thus, a need exists to include agricultural safety and health intervention as part of the post-doctoral residence training in primary care specialist programs, particularly in family and community medicine.

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